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ON A COLLECTION OF THYSANOPTERA FROM RABUN COUNTY, GEORGIA

J. R. Watson

A vacation of fifteen days spent in north-eastern Georgia during the latter part of August and the first days of September, 1922, gave the writer an opportunity to compare the thrips fauna of that region with that of Florida.

There are no records of any considerable collection of thrips from this region. The nearest localities that have been intensively studied are about Clarksville, Tenn., where Morgan has collected, and about Washington, D. C., where Hood has done much of his collecting.

Rabun County is in the north-eastern corner of Georgia. It is high and mountainous, the elevations ranging from about 2000 feet to 3900. As to the vegetation: here we found most of our boyhood friends (and enemies too—such as nettles and burdocks) of northern Ohio. But in the valleys one notes such southern plants as bitterweed *(Helenium tenuifolium)* and sweet gums and on the mountain sides the belated blossoms of the sourwood *(Oxydendron arboreum)* were conspicuous. On the whole the vegetation is much like that of southern Ohio or Kentucky.

The first observation to be made was the scarcity of thrips as compared with Florida. They are by no means such an important part of the fauna as with us. They do not force themselves upon one's attention. One must hunt for them, otherwise he would scarcely discover their existence.

The most productive collecting was, as usual, in flowers. Even such an unlikely blossom as the Indian pipe supplied us with one.

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But the Florida flower thrips *(Frankliniella bispinosa)* was entirely absent, its place being partly taken by its close relative *F. tritici.* But this insect was by no means as common as ours. It did not swarm in the blossoms, even of roses. Three or four per blossom was the maximum. Still this was the most common species. Numerous dissections of the heads of *Compositae* failed to discover any *Thrips abdominalis,* so common in the heads of composites in Florida.

Next after flowers these insects were most abundantly obtained by sweeping grass and weeds. Our most common species on grass, *Haplothrips graminis,* was entirely lacking. A new species of Haplothrips was obtained from grass but the most common species was *Frankliniella fusca.* This was much more common than in Florida, where it is known chiefly as a pest of tobacco, and nearly as common as its relative *F. tritici.*

Beating and sweeping shrubs brought in very few specimens. The most common was *Leptothrips mali,* the black hunter, a predaceous species that was quite apt to be found on any plant infested with plant lice. In vain were the young pines beaten for our pine thrips *Haplothrips pini.*

In all twenty-three species were taken, four of which proved to be new. *Thrips quinciensis, Haplothrips gracilis,* and *Hoplandrothrips flavoantennis* have hitherto been taken only in Florida. *Thrips impar* was described from Maryland and has not hitherto been reported elsewhere. *Frankliniella tenuicornis* has not heretofore been reported from America. Thus four species have had their known range considerably extended.

It is thus seen that the Thysanoptera, like the plants, show a mixture of southern and northern species.

A list of the species and their host plants follows:

THYSANOPTERA OF RABUN COUNTY, GEORGIA

Species	*Number taken*	*Host Plants*
Aeolothrips bicolor *Hinds*	3	Grass.
Sericothrips variabilis (Beach)	1	Shrubs.
Chirothrips insolitus *Hood*	1	Grass.
Malacothrips (?)	1	Weeds.
Heliothrips fasciapennis *Hinds*	9	Grass (8), smartweed *(Polygonum).*
Heliothrips haemorrhoidalis (Bouche)	1	Shrub.
Thrips quinciensis *Morgan*	2	in blossoms of *Vernonia* and *Polygala.*

Thrips crenatus n. sp.	3	Pine, *Lespedeza*, bitterweed.
Thrips impar *Hood*	6	Indian pipe, *Lespedeza* (4), grass.
Frankliniella fusca *(Hinds)*	35	Grass (29), pine (2), *Lespedeza* (4).
Frankliniella minuta *(Moulton)* (?)	1	Red Clover.
Frankliniella tenuicornis, *Uzel*	2	On grass (identified by R. C. Treherne).
Frankliniella tritici *(Fitch)*	36	A variety of blossoms.
Heterothrips auranticornis n. sp.	16	Blossoms of *Helenium*.
Haplothrips rabuni n. sp.	5	Grass.
Haplothrips statices *Holiday*	4	Grass.
Haplothrips verbasci *(Osb.)*	14	Mullein.
Haplothrips angustipennis n. sp.	2	Grass.
Haplothrips gracilis *Watson*	1	
Leptothrips mali *(Fitch)*	16	On many shrubs and herbs.
Hoplandrothrips flavoantennes *(Wats.)*	1	Oak.
Hoplandrothrips pergandei *(Hinds)*	1	Grass.
Idolothrips armatus *Hood*	1	On wild cane *(Arundinaria)*.

Thrips crenatus, n. sp.

Female. Length about 0.8 mm. (0.74 to 1 mm.). Color dark brown, thorax lighter with a little orange hypodermal pigment. Without prominent bristles except near the end of the abdomen.

Measurements: Head, length .075, width .105; Prothorax, length .113, width .15; Mesothorax, width .207; Abdomen, width .214; Antennae, total length .173 mm.

Antennal segment	1	2	3	4	5	6	7
Length	18	27	32	28	22	37	16 microns
Greatest width	19	21	18	18	15	16	7 microns

Head about a third wider than long and two thirds as long as prothorax into which it is deeply retracted. Cheeks very slightly arched. Plainly sculptured with transverse anastomozing lines, a row of minute bristles behind each eye. *Eyes* dark, large, occupying about two-thirds the length and .7 the width of the head; non pilose; facets large. *Ocelli* large, light brown; widely separated, posterior situated opposite the posterior two-thirds of the eyes; bordered by deep orange crescents. *Antennae* rather short, from twice to two and a third times as long as the head. Segments 1 and 2 but little lighter than the head; 3-5 varying from yellowish brown (lighter at the base) to dark brown concolorous with the others; 6 and 7 dark brown. 1 cylindrical, about as wide as long; 2 urn-shaped with a very broad base, conspicuously wider than any of the others; 3 urn-shaped, abruptly narrowed to a slender pedicel; 4 oval, 5 smaller, urn-shaped; 6 cylindrical; 7 conical. Sense cones and bristle all short, colorless, almost invisible; a sense cone on the outer apical angle of segment 3 thick and heavy.

Prothorax large, sides convex and diverging posteriorly, without sculpture, a short, colorless bristle on each posterior angle.

Mesothorax sculptured in the middle of the dorsal surface, sides bulging. Metathorax with nearly straight but diverging sides. *Legs* almost uniformly brown, but little lighter apically. *Wings* uniformly brown except for a small colorless area about .2 the length from the base. Costal fringe of hairs scanty, absent from basal half. Veins rather prominent; costal bearing from 23 to 26 bristles, the others from 5 to 7, scale 5.

Abdomen with a few short, brown bristles on segments 9 and 10. Dorsal surface faintly sculptured. The posterior margin of each segment is bordered with a series of about 20 rounded lobes. On the posterior segments these are more difficult to detect.

Male not seen.

Described from three females taken in Rabun Co., Ga., on *Lespedeza,* pine and bitterweed *(Helenium).* Readily recognized by the dark color, short intermediate antennal segments and crenated posterior borders of abdominal segments.

Type in the author's collection. Paratype in the National Museum.

Heterothrips auranticornis, n. sp.

Female. Color of the body a uniform deep brown, tip of fore femora, and both ends of others, and of all tibiae, and most of the tarsi, brownish yellow. Antennal segments 3 and 4 yellow, conspicuously shaded with orange.

Measurements: Total length, females 1.2, male .8; head length, females .112, males .107; width, females .15, males .133; Prothorax, length, females .13, males .128, width, females .22, males .18; Mesothorax, width, females .23, males .20; Abdomen, width, females .30, males .14; total, females .25, males .22.

Antennal segments	1	2	3	4	5	6	7	8	9
Length	20	30	55	39	28	32	24	20	19 microns
Width	19	26	53	35	27	28	19	18	15 microns

Head about a third wider than long, widest behind the eyes. Cheeks arched, roughened, and bearing a few short, stiff bristles. All the dorsal surface behind the eyes striated with a half dozen anastomozing lines. Frontal costa deeply emarginate. A row of four minute bristles behind each eye and posterior ocellus. One in front of each posterior ocellus and a minute one near the inner anterior angle of each eye, opposite the anterior ocellus. *Eyes* dark, very large, occupying about .7 the length and .8 the width of the head, non-protruding, pilose, facets very large. Posterior ocelli very large, situated opposite posterior third of the eyes and touching their margins. Anterior about half the diameter of the posterior and about the size of the facets of the eyes; situated on the edge of the frontal emargination and directed forward. *Mouth cone* reaching about half way across the prosternum; sides almost straight up to the prolonged but rounded apex. Antennae 9-segmented, 2.2 as long as the head. Segment 1 short and thick, concolorous with the head; 2 lighter; 3 and 4 yellow with considerable orange pigment; 5 at least two-thirds yellow but dark brown at the extreme

base and apex; 6 brown but yellowish on basal half; 7-9 dark brown. 3 long wedge-shaped with a narrow base; 4 and 6-9 barrel-shaped; 5 oval; 4-6 with short broad pedicels; margins, especially of 3 and 4, conspicuously crenate. Hairs and sense cones very pale, short and inconspicuous. A distal ring of sensoria on segments 3 and 4.

Prothorax but little longer than the head and 1.7 as wide as long; widest posteriorly. Anterior margin and sides nearly straight; posterior margin much arched. Dorsal surface striated posteriorly. A short, thick spine on each anterior angle and two on each posterior; a row of eight minute ones along the anterior margin and about a score of others scattered over the dorsum. *Legs* rather slender. Fore femora but little thickened. Membranes of fore wings dark brown except two minute areas near the base; .075 mm. wide at the base (exclusive of scale); rather abruptly narrowed at about a third of their length to half the sub-basal width; length ten times that of the sub-basal width. Costal vein with about 31, anterior with 24 and posterior vein with 20 bristles.

Abdomen not pubescent but provided with a number of short bristles, a row along the posterior margin of each segment being especially prominent.

Males similar to the females but smaller. Fore femora considerably enlarged.

Described from fourteen females and two males taken from the heads of a composite *(Helenium)* in Rabun County, Ga. Type in the author's collection. Paratypes in the National Museum and in that of the University of Florida.

Haplothrips rabuni, n. sp.

Female. Length about 1.5 mm. Color dark brown to black with some reddish hypodermal pigment; antennal segment 3 and usually (but not always) fore tarsi and apical inner portion of fore tibiae yellowish brown.

Measurements: Head, length .20, width .166; Prothorax, length .122, width .241; Pterothorax, width .277; Abdomen, width .273; Tube length .108; width at base .054, at apex .031 mm. Antennae, total length .27 mm.

Segment	1	2	3	4	5	6	7	8
Length	21	40	41	46	42	40	37	26 microns
Width	27	26	22	29	27	27	26	14 microns

Head longer than wide, broadest at the middle, cheeks gently arched, slightly convergent posteriorly; vertex rounded, slightly produced. Postocular bristles fairly long but, like all the other bristles of head and thorax, almost or quite colorless and difficult to detect. *Eyes* medium sized, occupying slightly more than a third of the length of the head, not protruding, not pilose. Ocelli large, yellowish, the anterior on the extreme vertex of the head and directed forward, the posterior pair opposite the anterior third of the eyes. *Antennae* about a third longer than the head. Segment 1 (and sometimes 2) concolorous with the head; 3 yellowish brown; 4 and 5 light brown without yellowish bases; 6-8 darker brown; 1 short-

cylindrical; 2 urn-shaped; 3-6 oblong elliptical, 3 quite markedly pedicellate, 4-6 with broader, shorter pedicels; 7 barrel-shaped, truncate at the apex and broadly united with 8; 8 sub-conical. Sense cones and bristles short, colorless and inconspicuous. *Mouth cone* blunt, reaching past the middle of the prosternum.

Prothorax small, about .6 the length of the head and, including coxae, twice as wide as long. Coxa bears a short but thick and brown bristle, the only conspicuous one on the anterior portion of the body, others colorless, mostly blunt at apex; a pair on each posterior angle of medium length.

Pterothorax considerably wider than prothorax. Sides slightly converging posteriorly. *Wings* rather short, membrane reaching but little past the middle of the abdomen; colorless except for a decidedly brown area at the base of the primaries; primaries markedly narrowed in the middle, fringe rather sparse, of medium length, with 6 or 7 interlocated hairs. *Legs* rather slender, except fore tarsi and tibiae, concolorous with the body; fore femora but slightly enlarged; fore tarsus with a small, short, acute tooth.

Abdomen rather long and slender, bristles rather short, light brown to colorless and pointed. Tube rather short, terminal bristles but little longer than the tube.

Male not seen.

Described from four females taken from grass and sedges along a small stream at Clayton, Rabun County, Ga. Type in the author's collection. Paratypes in the National Museum and in that of the University of Florida.

Close to H. graminis Hood, but differs in the shorter and darker antennae, darker color, smaller prothorax, larger pterothorax, longer, more slender abdomen, longer intermediate antennal segments and colorless bristles.

Haplothrips angustipennis, n. sp.

Female. Body length about 1.3 mm. (from 1.14 to 1.46). Color almost uniformly dark mahogany brown, fore tibiae and tarsi and intermediate antennal segments yellowish brown.

Measurements: Head, length .185, width .151; Prothorax, length .12, width .25; Mesothorax, width .25; Abdomen, width .227; Tube, length .106; width at base .061, at apex .031. Antennae, total length .29 mm.

Segment	1	2	3	4	5	6	7	8
Length	26	37	45	50.5	44	40	38.5	26 microns
Width	26	24	20	25	23	23	21	16 microns

Head about a third longer than broad. Cheeks slightly arched, converging slightly posteriorly, somewhat roughened and bearing a few short bristles. Postocular bristles conspicuous, pointed, nearly as long as eyes. Eyes large, occupying nearly half the length of the head, not pilose, facets large. *Ocelli* large, larger than facets of the eyes, brownish yellow, posterior pair situated opposite the anterior .4 of eyes and contiguous with their

margins; anterior directed forward. *Mouth cone* reaching about half way across the prothorax, abruptly constricted near the base but very broadly rounded at the apex. *Antennae* 8-segmented. Segment 1 cylindrical, concolorous with the head; 2 urn-shaped, abruptly constricted to a very broad pedicel, concolorous with the head except the yellowish brown apex; 3 obovate, narrower than either 2 or 4, gradually narrowed to a broad base, yellowish brown, darker along the sides and with a broad, colorless band at the apex, usual sense cones present but colorless and inconspicuous; 4 ovate with a short, broad pedicel, basal third concolorous with 3, but remainder darker, the colorless collar at the apex narrow; 5 and 6 barrel-shaped, pedicel shorter and narrower than in 4, dark brown; 7 cylindrical, sides but slightly arched and converging slightly apically; 8 unusually large, margin conspicuously crenate. All antennal bristles thin, pale brown and inconspicuous.

Prothorax (including coxae) about twice as wide as long, trapezoidal in outline, much widened posteriorly, posterior margin arched, posterior angles abruptly rounded and bearing a pair of sharp-pointed, light colored bristles of medium length; coxae each bearing one short, dark, thick bristle and a pair of very short, thorn-like spines; anterior angle with a short heavy bristle.

Mesothorax broad, with very acute anterior angles and nearly straight sides which converge slightly posteriorly. *Mesothorax* somewhat narrower, sides more arched and more constricted posteriorly. *Wings* rather weak, membrane scarcely reaching the eighth abdominal segment, quite narrow except at the extreme base, unusually deeply constricted for a Haplothrips, to a diameter about half that nearer the apex. Fringing hairs moderately long, seven interlocated ones. *Legs* rather slender, dark, fore femora but little thickened; fore tarsus with a small tooth.

Abdomen long and slender, destitute of conspicuous bristles, those of the ninth segment shorter than the tube. Tube of moderate size, sides slightly concave, terminal bristles about as long as the tube.

Male not seen.

Described from two females taken from coarse marsh grasses at Clayton. Type and paratype in the author's collection.

Hoplandrothrips flavoantennis (Wats.)

The female only was originally described. *(Liothrips flavoantennis,* Ent. News, March 1916, p. 129.) A male was collected in Georgia.

Male. Color uniformly dark brown except antennal segments 3-8, which are bright yellow. (In some females also segment 8 is yellow, also segment 2 may be brown.)

Measurements: Total length 1.7 mm.; head, length .235 mm., width .18 mm.; prothorax, length .13 mm., width including coxae .29 mm.; meso-

(Continued on page 47)

The
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THE ENTOMOGENOUS FUNGI

October was an unusually rainy month in Florida. According to the Weather Bureau the average for the state was 8.28 inches above normal, and only one station in peninsular Florida (New Smyrna) reported a deficiency. There was not a single day without rain at some station. Due undoubtedly to this meterological condition the entomogenous fungi have been unusually efficient this fall thruout the citrus belt. A careful count of some hundreds of citrus leaves at Gainesville showed that the fungi had killed 97.2% of the fall brood of whitefly—a percentage of kill seldom equalled in commercial spraying. In the order of their efficiency the fungi ranked as follows: the brown fungus, the red aschersonia, *Microcera*, the cinnamon fungus.

RECENT PUBLICATIONS

Bulletin 165 of the Experiment Station and the October number of the Quarterly Bulletin of the State Plant Board are of unusual interest and importance to Florida and other cotton-growing states. In this bulletin Mr. Geo. D. Smith presents "A Preliminary Report Upon an Improved Method of Controlling the Boll Weevil". "The gist of the method may be summarized in two sentences, as follows:

1. Remove all squares from the cotton plants about June 5 and destroy them.

2. Follow this at once with a thoro application of calcium arsenate or lead arsenate, using a suitable dusting machine."

These measures reduce the weevils to such small numbers that the cotton is enabled to set a good crop of bolls before the weevils again become abundant. Where this method of control has been tried the past year practically as much cotton has been harvested as would have been gathered were no weevils present.

The principle underlying this method of control is that towards which the best practice in economic entomology is steadily tending, viz., a very thoro cleanup of the insect and hence less need of frequent repetition, as near an approach to eradication as is practicable rather than temporary palliatives. This method of dealing with the boll weevil parallels quite closely the latest recommendations for the control of the curculio in peaches and plums, i. e., to pick up and destroy the drops with their contained larvae as well as poisoning the adults.

Farmers' Bulletin 950, by Philip Luginbill, treats of the Southern Corn Rootworm (Diabrotica 12-punctata). Altho a common insect in Florida, this beetle is with us not a serious pest of corn. In the extreme northern part of the state it takes a small percentage of the young corn. The author recommends planting in late April to escape damage from this insect. This beetle is very common in oat fields about Gainesville from January to March.

Dr. H. S. Davis, until a year ago head of the department of zoology in the University, is the author of "A New Bacterial Disease of Fresh Water Fishes"—Document 924, U. S. Bureau of Fisheries.

Carl B. James, Horticulturist for the L. and N. Ry., has recently published a very attractive and valuable bulletin on the satsuma orange.

THE SCOLDING BUTTERFLY

Dear Friends of the Entomological Society:

When a person arrives in a new country, the first things that attract his attention are the objects and customs to which he is not accustomed in his own country. So it was with me when I

arrived in Brazil. I saw hundreds of interesting and important things that the average Brazilian, who has lived among them always, "never saw". Brazil, as you know, is noted for its magnificent butterflies and gigantic insects of various orders. Some of the unusual insects are credited with being extremely venomous. I was told of one insect so venomous that if it lights on the trunk of a tree, the tree dies from the effects. Entomologists, being extremely innocent, capture these insects with impunity. The thing I want to tell you about today is the Scolding Butterfly, *Ageronia feronia*, L.

My friends in Florida will naturally think that I have gone "louco" with the heat. But remember that in Brazil we are now in mid winter, and some mornings the weather is dreadfully cold (?). At least my Brazilian friends say that it is. And the Centigrade thermometer says that the temperature is some seven or eight degrees above zero. Now what I was going to tell you about is the butterfly that has a voice. I am sending you a photograph that represents her sitting on a palm tree. I know that it is a female which does the talking because the voice is high keyed and staccato. A male never could get up so much energy.

The scolding is done probably with organs similar to those used by crickets or katydids. The sound is not quite as strong as that of the big katydids nor of the big black cricket. Organs similar to those possessed by these insects are located near the base of the wings. They make this snapping noise only when on the wing. Sometimes they scold their mate and sometimes they scold the entomologist who is passing by.

Another peculiarity of this species is that it looks very much like the lichens that inhabit tree trunks. The photograph I enclose you brings out this peculiarity very strikingly.

Now if there is any entomologist present who doubts the correctness of these observations, let him look up Holland and also Sharp, who likewise became affected with the Brazilian heat.

Very truly yours,

(Signed) P. H. ROLFS.

Vicosa, E. F. Leopoldina,
Minas Geraes, Brazil.
July 27, 1922.

HYMENORUS OBSCURUS AS A PEST OF CITRUS (COL. CISTELIDAE)

J. R. WATSON

Occasionally one sees on the bark of citrus and other trees a dense colony composed of hundreds of little black beetles. The beetles are oval in shape, less than a quarter of an inch long and covered with grayish-brown hairs. In the late afternoon the beetles leave their resting place and go in search of food which consists mostly of lichens and other growths on the bark of the trees. But it seems that they may occasionally become pests. In July Mr. S. B. Jones of Orchid, Fla., sent in to the Experiment Station a number of these beetles with the statement that they had been feeding extensively on "June bloom" and other tender growth of his trees. In confinement they feed greedily on tender citrus foliage.

The writer has also recently caught these beetles eating out freshly inserted buds in a nursery. It would seem that this beetle must be included among the minor pests of a citrus tree.

This beetle should not be confused with the downy darkling beetle *(Epitragus tomentosus)*, which it considerably resembles in shape and color. The latter is larger, never collects in colonies, and is one of the most beneficial insects in a citrus grove. Its food habits are very similar to those of lady beetles and in many groves it is much more abundant than even the twice-stabbed lady-beetle.

A NEW CITRUS INSECT

A caterpillar recently found feeding on the leaves of a young grapefruit tree at Orlando, Florida, proved on rearing to maturity to be *Prodenia latifascia* Walker.

Altho this insect probably is of no economic importance as a pest, its presence seems to be a new record for citrus insects. Hence this note may be of interest.

The identification was made by Mr. Wm. Schaus of the National Museum, who says that *P. latifascia* Walker is essentially a tropical insect found from Mexico to Argentina, including Jamaica, Cuba, Haiti, St. Lucia. The only previous records of its breeding in the United States is one each from onions and alfalfa in Texas. Nothing is known of its host plants in other countries.

The insect belongs to the cut worm family and resembles somewhat, both in larval and adult form, some of our common pests, as the sweet potato caterpillar, *P. commelinae,* and the cotton boll cut worm, *P. ornithogalli.* When full grown the larva was about 2 inches long and of a brownish gray velvety color with a wide dark band down the dorsal surface and 3 narrow golden brown stripes along each side; ventral surface greenish brown.

It pupated July 31st in soil and the moth emerged August 17, 1922.

ARTHUR C. MASON.

THE PSOCID OF THE OAKS

FRANK STIRLING

Thruout the south-eastern United States, especially in Florida, the water oaks frequently take on a bright silvery-grey coloring which shows particularly on the larger limbs and trunks. Close observation shows this to be caused by a silky web which completely covers the surface. This web is of a bright, clear color and glistens in the sun and on bright moonlight nights, making an effect well worth noticing.

By removing a part of the web with a pen knife or sharp stick one may, by carefully observing, note countless numbers of a tiny insect. This little insect is known as a psocid (Psocus sp.) and is related to the book-lice. These psocids are useful rather than injurious, as they feed on fungus growths and lichens which grow on the trunks and larger limbs of the oaks. They apparently spin this fine, gauzy web for their protection against birds and other enemies which would otherwise destroy them.

This insect is reported as occurring in especial abundance on water oaks in the vicinity of Lakeland, Orlando, Sorrento, Dade City and Gainesville, Fla., along the Gulf Coast in the vicinity of New Orleans, La., and near Mobile, Ala. To those not informed the appearance of this grey, silvery covering is often viewed with alarm.

The webs, together with the insects, will disappear after a short time and the only effect upon the tree will be a cleaner and healthier appearance of the bark.

A NEW THRIPS FROM CITRUS IN ALABAMA

J. R. WATSON

Haplothrips harnedi, n. sp.

Female. Dark brown, 3rd antennal segment and distal half of tibiae yellowish brown.

Measurements: Total length 1.36; head, length .18, width .13; prothorax, length .15, width .24; mesothorax, width .22; abdomen, width .27; tube, length .108, width at base .057, apex .033.

Antennal segment	1	2	3	4	5	6	7	8
Length	28	45	45	48	40	38	39	27 microns
Width	30	28	25	26	23.5	21	17.5	11 microns

Head a third longer than wide; dorsal surface with a few faint cross striations; cheeks slightly convex, converging a little posteriorly. Postocular bristles nearly as long as the eyes, with dilated, colorless tips. *Eyes* medium sized, not protruding, not pilose, black, triangular in outline. *Ocelli* medium sized, widely separated, anterior situated far forward, posterior pair opposite the anterior .4 of eyes and near their margins, bordered by dark crescents. *Mouth cone* broadly rounded, reaching scarcely to the middle of the prothorax. *Antennae* 1.6 times as long as head; segments 1, 6, 7, and 8, concolorous with the head, 2 and 5 a little lighter, 4 considerably lighter, 3 brownish yellow to yellowish brown with colorless apex; sense cones colorless and inconspicuous, spines small, light brown.

Length of prothorax a little greater than width of head, width (including coxae) 1.6 times the length. Prominent spines near the anterior angles, on coxae, and near the posterior angles; all with dilated tips.

Pterothorax distinctly narrower than the prothorax, sides straight, converging posteriorly. *Legs* rather short, femora lighter than the body; fore pair slightly enlarged. *Wings* rather weak but membrane reaching the fifth segment. Fringing hairs sparse, about three interlocated ones on primaries.

Abdomen variable in shape. In some individuals excessively long and slender, in others but little more than twice as long as wide. Bristles few; some of those on the last segment have dilated tips but the longest have acute tips. *Tube* rather small, sides rather abruptly dilated at the base; terminal bristles short.

Male not seen.

Described from nine females collected on citrus trees in southern Mississippi and sent to the author by Prof. R. W. Harned. Type in the author's collection. Paratype in the National Museum.

Close to *H. funki* Watson, but differing in the darker color of the tibiae, tarsi, and third antennal segment, smaller size, relative lengths of antennal segments and especially the narrow pterothorax.

PERSONALS

Dr. Carl J. Drake is now state entomologist of Iowa.

Dr. Wilmon Newell has been called north by the death of his father.

Mr. W. L. Goethe is teaching science in the Live Oak High School.

The potato growers of the Hastings district sent Dr. C. D. Sherbakoff to Maine to select seed for them.

Mr. C. M. Berry spent part of the summer in New York State inspecting sources of seed used by the Sanford growers.

Dr. W. S. Blatchley left Indianapolis on November 14 for Rio de Janeiro, Brazil. He expects to return to Dunedin the last of March.

Mr. A. H. Beyer, assistant entomologist of the Experiment Station, plans to spend several weeks at Harvard studying entomogenous fungi.

According to Science Mr. John Belling, former plant breeder in the Experiment Station and now of the Eugenics Laboratory at Cold Spring Harbor, N. Y., received the doctorate from the University of Maine in June.

Dr. H. S. Dozier, former assistant in the Experiment Station, is in charge of the camphor scale investigations of the U. S. Bureau of Entomology and is stationed in New Orleans. He received the doctorate from Ohio State in June.

REPORT OF MEETINGS OF THE FLORIDA ENTOMOLOGICAL SOCIETY

September 25. The Society met in Language Hall at 4:30 o'clock, President Stirling in the chair. Those present were: Beyer, Chaffin, Goodwin, Merrill, Montgomery, Rogers and Watson. New members elected were: Miss Georgia Berger, teacher of Biology in Tampa High School; Miss Bernice Dew and Rudolph Baldwin, teacher and student in Alachua High School; and Mr. S. E. Neal, of the firm of Neal & Neal of Jacksonville.

The question of continuing the joint meetings with the Horticultural Seminar was discussed and referred to the Executive Committee.

Under "Brief and Timely Notes" Prof. Watson spoke of observations on the Mexican Bean Beetle in Rabun County, Georgia, and the capture of the greenhouse thrips out of doors. Mr. Goodwin reported the discovery of European Foul brood in Seminole County.

The address of the evening was given by Dr. J. S. Rogers, on the Museum of Zoology of the University of Michigan. This is a research museum rather than an exhibition museum. Dr. Rogers spoke of the progress made in surveys of the different groups, particularly insects. The talk was very interesting and showed that Dr. Rogers is doing a great part in the carrying out of their plans by working up the family Tipulidae (crane flies) of the order Diptera.

November 1. The Society met in joint meeting with the Horticultural Seminar, Major Floyd in the chair.

Members present: Montgomery, O'Byrne, Chaffin, Beyer, Lord, Watson, Berger, Stirling, Merrill, and Stone. Mr. E. R. Mezgler of Hightown, N. J., was elected to membership.

The paper of the evening was by Professor Floyd on "A Proposed Score Card for Judging Citrus Lands". It was freely discussed by members present.

A. H. BEYER, Secretary.

ON A COLLECTION OF THYSANOPTERA FROM RABUN COUNTY, GEORGIA

(Continued from page 39)

thorax, width .29 mm.; abdomen, greatest width .29 mm.; tube, length .16 mm., width at base .064 mm., at apex .034 mm. Antennae, total length .44 mm.; segment 1, 27; 2, 50; 3, 77; 4, 77; 5, 69; 6, 67; 7, 55; 8, 29 microns.

Head about 1.5 times longer than wide. *Eyes* large, occupying nearly a third the length of the head and fully a third of the width, slightly protruding, non-pilose, red by reflected light. Ocelli large, yellowish, situated far forward. The anterior on the large frontal lobe between the bases of the antennae and directed forward. The anterior margins of the posterior pair about opposite the anterior margins of the eyes. *Mouth cone* long, tapering, almost reaching the mesosternum. *Antennae* long and slender,

nearly twice as long as the head. Segment 1 and base of 2 concolorous with the head, apex of 2 lighter brown; remaining segments clear bright yellow. Abdomen long and slender, tapering gradually to the 8th segment and then more abruptly; bristles on the posterior angles of the segments progressively longer, those on the 9th nearly as long as the tube. Tube long and slender. Otherwise identical with the female.

Described from a single male taken from oak at Clayton.

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